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Mode conversion and wave mediated reconnection[1] XIAOGANG WANG, Peking University, China, CHIJIE XIAO, ZUYIN PU, Peking University — Recent theoretical, experimental and observational developments in space and laboratory plasma studies have shown that whistler modes in the ion initial region and lower hybrid modes in the electron dynamics region may play a crucial role in magnetic reconnection. Based on satellite observations and wave resonance and mode conversion theory, we propose a wave mediated reconnection model to understand the collisionless reconnection process through out the ion and electron dynamics regions. The whistler and lower hybrid modes excitation, anomalous resistivity, and electron layer dynamics are then discussed in the frame of the model.

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